

## Remarks

In the present RCE, two claims (1 and 16) are amended; and one claim (50) is newly added. Claims 1-23 and 50 are presented for examination.

### I. Claim Rejections: 35 USC § 102(b)

Claim 1 is rejected under 35 USC § 102(b) as being anticipated by USPN 5,432,873 (Hosoya). Applicants respectfully traverse this rejection.

A proper rejection of a claim under 35 U.S.C. § 102 requires that a single prior art reference disclose each element of the claim. See MPEP § 2131, also, *W.L. Gore & Assoc., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 U.S.P.Q. 303, 313 (Fed. Cir. 1983). Since Hosoya neither teaches nor suggests each element in claim 1, this claim is allowable over Hosoya.

As one example, claim 1 recites that the channel is created “within a planar layer” of a first and second substrate. Hosoya discloses that the optical waveguides are formed on top of a substrate, not within the substrate. Creating a channel within a substrate is quite different than forming a waveguide on a substrate.

For at least these reasons, claim 1 is allowable over Hosoya.

As another example, claim 1 recites that the first and second substrates are stacked. Hosoya does not teach two substrates that are stacked with a channel formed in both the first and second substrates. Figs. 1 and 2 in Hosoya show a single substrate 6 with a first waveguide 8 formed in thin layer 7 and a second waveguide 11 formed in thin layer 10. Again, Hosoya does not disclose two stacked “substrates” as recited in claim 1.

For at least these reasons, claim 1 is allowable over Hosoya.

### II. Claim Rejections: 35 USC § 103(a)

Claims 2, 4-5, and 9-11 are rejected under 35 USC § 103(a) as being unpatentable over Hosoya in view of US publication number 2003/0118310 (Steinberg). As shown above in section I, Hosoya does not teach or suggest all the elements in independent claim 1. For at least these reasons, dependent claims 2, 4-5, and 9-11 are allowable over Hosoya in view of Steinberg.

### **III. Claim Rejections: 35 USC § 103(a)**

Claims 2-5 and 12-15 are rejected under 35 USC § 103(a) as being unpatentable over Hosoya in view of USPN 6,624,077 (White). As shown above in section I, Hosoya does not teach or suggest all the elements in independent claim 1. For at least these reasons, dependent claims 2-5 and 12-15 are allowable over Hosoya in view of White.

### **IV. Claim Rejections: 35 USC § 103(a)**

Claims 2, 6-9, and 14 are rejected under 35 USC § 103(a) as being unpatentable over Hosoya in view of US publication number 2001/0026670 (Takizawa). As shown above in section I, Hosoya does not teach or suggest all the elements in independent claim 1. For at least these reasons, dependent claims 2, 6-9, and 14 are allowable over Hosoya in view of Takizawa.

### **V. Claim Rejections: 35 USC § 103(a)**

Claims 16, 18-19, and 21-22 are rejected under 35 USC § 103(a) as being unpatentable over USPN 6,624,077 (White) in view of USPN 6,693,736 (Yoshimura). These rejections are traversed.

Claim 16 recites providing first and second boards. Each board has a channeled face defining a channel formed in the board. White does not disclose first and second boards with channels formed in the boards. As shown in Fig. 2A of White, the channel 210 is formed in the cladding layers 206/207, not in the substrate 204. A cladding layer is not a board as these terms are known to one of ordinary skill in the art.

For at least these reasons, claim 16 and its dependent claims are allowable over White in view of Yoshimura.

### **VI. New Claim**

Claim 51 is newly added and recites “switching the switch between an opaque state that prevents passage of an optical signal and a transparent state that permits passage of the optical signal.” This element is not taught or suggested in the art of record.

### **CONCLUSION**

In view of the above, Applicants believe that all pending claims are in condition for allowance. Allowance of these claims is respectfully requested.

Any inquiry regarding this Amendment and Response should be directed to Philip S. Lyren at Telephone No. 832-236-5529. In addition, all correspondence should continue to be directed to the following address:

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